Appendix 4

FWCC Shorebird Survey Guidelines

*(1) Shorebird Surveys***.** Shorebird surveys should be conducted by trained, dedicated individuals (Shorebird Monitor) with proven shorebird identification skills and avian survey experience. Credentials of the Shorebird Monitor will be submitted to the FWC Regional Biologist for review and approval. Shorebird Monitors will use the following survey protocols.

(2) Nesting Season Surveys. Shorebird Monitors should review and become familiar with the general information and data collection protocols outlined on the FWC's Beach-Nesting Bird Website (http://myfwc.com/shorebirds/). An outline of what data should be collected, including downloadable field data sheets, is available on the website.

a. The nesting season is generally 1 April – 1 September, but some nesting may occur through September. In addition, the imperiled snowy plover (*Charadrius alexandrinus*) may nest as early as February along the west coast and panhandle of Florida.
b. Nesting season surveys shall begin on April 1 (or February 15 in snowy plover habitat) or 10 days prior to project commencement (including surveying activities and other pre-construction presence on the beach), whichever is later, and be conducted daily throughout the construction period or through August, whichever is earlier. Weekly surveys of the project site shall continue through August or through fledgling or loss of identified nests or hatchlings, whichever is later.
c. Nesting season surveys shall be conducted in all potential beach-nesting bird habitat within the project boundaries that may be impacted by construction or pre-construction activities during the nesting season. Portions of the project in which there is no potential for project-related activity during the nesting season may be excluded.
d. Surveys for detecting new nesting activity will be completed on a daily basis prior to movement of equipment, operation of vehicles, or other activities that could potentially disrupt nesting behavior or cause harm to the birds or their eggs or young.
e. Surveys should be conducted by traversing the length of the project area and visually inspecting, using binoculars or spotting scope, for the presence of shorebirds exhibiting breeding behavior.
f. If an ATV or other vehicle is needed to cover large project areas, the vehicle must be operated at a speed <6 mph, shall be run at or below the high-tide line, and the Shorebird Monitor will stop at no greater than 200 meter intervals to visually inspect for nesting activity.

(3) Once breeding is confirmed by the presence of a scrape, eggs, or young, the Bird Monitor will notify the Regional Nongame Biologist of the FWC at (561) 648-3205 within 24 hours.

g. All breeding activity will be reported to the Beach-Nesting Bird website within one week of data collection.
h. Observations of non-breeding shorebirds should be reported to the Shorebird-Seabird Occurrence Database, as described below.

(4) Non-Breeding Shorebird Surveys. Data collected on non-breeding shorebirds should be compatible with, and reported to, the Shorebird-Seabird Occurrence Database (http://myfwc.com/...).

i. Surveys for non-breeding shorebirds should begin 14 days prior to construction commencement and be conducted once every 2 weeks for at least one year post-construction. Data collected during these surveys will provide valuable information on the use of nourished beaches to shorebirds.
j. Survey for non-breeding shorebirds will include all potential shorebird habitat within the project boundary.
k. Data should be entered into the database within one month of collection.

(5) Buffer Zones and Travel Corridors. Within the project area, the 300 ft-wide buffer zone shall be established around any location where shorebirds have been engaged in nesting behavior, including territory defense. Any and all construction activities, including movement of vehicles, should be prohibited in the buffer zone.

l. The width of the buffer zone shall be increased if birds appear agitated or disturbed by construction or other activities in adjacent areas.
m. Site-specific buffers may be implemented upon approval by FWC as needed.
n. Reasonable and traditional pedestrian access should not be blocked where nesting birds will tolerate pedestrian traffic. This is generally the case with lateral movement of beach-goers walking parallel to the beach at or below the highest tide line. Pedestrian traffic may also be tolerated when nesting was initiated within 300 feet of an established beach access pathway. The FWC staff shall be actively involved to determine if pedestrian access can be accommodated without compromising nesting success.
o. Designated buffer zones must be posted with clearly marked signs around the perimeter. If pedestrian pathways are approved within the 300-foot buffer zone, these should be clearly marked. These markings shall be maintained until nesting is completed or terminated. In the case of solitary nesters, nesting is not considered to be completed until all chicks have fledged.
p. No construction activities, movement of vehicles, or stockpiling of equipment shall be allowed within the buffer area.

(6) FWC-approved travel corridors should be designated and marked outside the buffer areas. Heavy equipment, other vehicles, or pedestrians may transit past nesting areas in these corridors. However, other activities such as stopping or turning shall be prohibited within the designated travel corridors adjacent to the nesting site.

q. Where such a travel corridor must be established within the project area it should avoid critical areas for shorebirds (known nesting sites, wintering grounds, FWC-designated Critical Wildlife Areas, and USFWS-designated critical piping plover habitat) as much as possible, and be marked with signs clearly delineating the travel corridor from the shorebird buffer areas described above.
r. To the degree possible, the some activity shall be maintained within these corridors on a daily basis, without directly disturbing any shorebirds documented on site or interfering with sea turtle nesting, especially when those corridors are

established prior to commencement of construction. Passive methods to modify nesting site suitability must be approved by FWC Regional Biologist for that region.

(7) Notification. If shorebird nesting occurs within the project area, a bulletin board will be placed and maintained in the construction area with the location map of the construction site showing the bird nesting areas and a warning, clearly visible, stating that "BIRD NESTING AREAS ARE PROTECTED BY THE FLORIDA THREATENED AND ENDANGERED SPECIES ACT AND THE STATE and FEDERAL MIGRATORY BIRD ACTS".

*(8) Beach Contours***.** All tilling and scarp removal should be done outside the shorebird nesting season. It is the responsibility of the contractors to avoid tilling or scarp removal in areas where nesting birds are present.

s. A relatively even surface, with no deep ruts or furrows, shall be created during tilling. To do this, chain-linked fencing or other material shall be dragged over those areas as necessary after tilling.
t. The slope between the mean high water line and the mean low water line must be maintained in such a manner as to approximate natural slopes.

*Placement of Equipment and Sand***.** If it will be necessary to extend construction pipes past a known shorebird nesting site or over-wintering area for piping plovers, then whenever possible those pipes should be placed landward of the site before birds are active in that area. No pipe or sand shall be placed seaward of a known shorebird nesting site during the shorebird nesting season.